



An ounce of tuberculosis prevention...

As an effective vaccine for tuberculosis edges closer, there are calls for a greater focus on prevention as well as treatment until that day comes. Jacqui Thornton reports from India.

Anil Kumar, a night watchman living in the Muslim slum of Poolbagh in Hyderabad, has just finished a punishing course of drug-resistant tuberculosis treatment. It was tough, emotionally and physically, he says, but he is now clear of disease.

He is an example of successful active case finding. Here, community health workers employed by NGO TB Alert India persuaded a local women's group to look out for neighbours showing signs of the disease. "We asked them once, twice, thrice, and then a fourth time to help—and then they said they would take it up", says CEO Vikas Panibatla. In the past year, 42 people have been diagnosed with pulmonary tuberculosis after being spotted by members of similar groups across the city.

Active case finding is vital, particularly in India, which has the world's highest burden of tuberculosis, accounting for more than a quarter of cases. In 2018 there were 2.69 million new cases, a small reduction from 2.74 million the previous year. Worldwide in 2018, 10 million people became ill with tuberculosis and 1.5 million died; lack of access to quality prevention is an important contributory factor.

An hour away from the slum, the 50th Union World Conference on Lung Health was discussing the latest scientific developments in tuberculosis and other pulmonary diseases, attended by 4300 delegates from 80 countries, convened by the International Union Against Tuberculosis and Lung Disease (the Union).

To achieve the target of ending the tuberculosis epidemic by 2030, in line with the UN's 2015 Sustainable Development Goals, prevention must be given as much emphasis as treatment, attendees of the conference heard.

"If we are to end the TB emergency, we need a prevention revolution...now we need to ensure that going forward, preventing wherever we treat becomes the new normal", José Luis Castro, Executive Director of the Union, told delegates.

The ultimate prevention tool is an effective vaccine. One of the highlights at the conference was the news that a phase 2b trial of the GSK vaccine for tuberculosis had a 50% efficacy in preventing people infected progressing to active tuberculosis.

But it is widely acknowledged that, if the results are confirmed in phase 3 trials, it will take years to come to market. Matteo Zignol, team leader for the Research for TB Elimination team at the WHO Global TB Programme, said: "optimistically I hope 8 years, some people are saying 10. Saying 5 years will be too naive".

In the meantime, prevention should be intensified. There is political will. A year ago the first UN High Level Meeting on Tuberculosis was held in New York which produced a political declaration on the fight against tuberculosis. Member states committed to providing preventive treatment to at least 30 million eligible people by 2022—4 million children younger than 5 years who are household contacts of people affected by tuberculosis, 20 million other household contacts, and 6 million people living with HIV—with the vision of reaching millions more.

This would be achieved, it said, by the rapid scale-up of access to testing, according to the domestic situation, and provision of preventative therapy.

But the recent WHO Global Tuberculosis Report 2019 released in October shows there is a long way to go. In 2018, only 349 487 under 5s were reached with preventive treatment in 109 countries. In the 5 years and older

group, only 79 195 gained access—a 30% decrease from 103 344 in 2017. Substantial scale-up will be needed.

Jay Achar, the technical lead for tuberculosis at Médecins Sans Frontières (MSF), says the prevention message should be targeted at high-burden middle-income countries where resources for treatment of disease should already be available.

The message will be sweetened by the news that rifapentine, with a shorter treatment course of 3 months, has been discounted by 66% to US\$15 in the public sectors of 100 high-burden low-income and middle income countries in a deal between Unitaid, the Global Fund to Fight AIDS, Tuberculosis and Malaria, and makers Sanofi.

But many of the fragile, unstable countries that MSF works in still struggle with treatment programme implementation, where tuberculosis remains life-threatening. Achar says: "in those situations I would say it's crucial to strengthen that component of the programme before tackling prevention. The challenge always comes back to resources".

National tuberculosis programmes may argue they lack the time or the money to seek out and treat all the high-risk groups, let alone extend preventive treatment to all contacts, not just household. There is evidence that prevention therapy can be home delivered and a new feasibility study in four African countries presented at the conference built on this, demonstrating that home visits could be implemented without additional staff, though resources for transportation and phone costs were required.

In addition, the study, which had a 12-month follow up, showed that shorter treatment regimens of 3 months in an area of high tuberculosis burden were effective. This short regimen has

For more on the **scale of tuberculosis in India** see https://extranet.who.int/sreeReports?op=Replet&name=%2FWHO_HQ_Reports%2FG2%2FPROD%2FEXT%2FTBCountryProfile&ISO2=IN&LAN=EN&outtype=html

For more on **tuberculosis prevention** see <https://www.theunion.org/what-we-do/publications/technical/advancing-tuberculosis-prevention-issue-brief>

For more on **efforts to improve prevention** see **The Lancet Commission Lancet** 2019; 393: 1331–84

For more on the **50th Union World Conference on Lung Health** see <https://hyderabad.worldlunghealth.org/>

For more on **GSK's vaccine** see *N Engl J Med* 2019; published online Oct 29. DOI:10.1056/NEJMoa1909953

For the **UN political declaration** see <https://digitallibrary.un.org/record/1649568?ln=en>

For the **2019 WHO report** see https://www.who.int/tb/publications/global_report/en/



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been studied in the UK with a long follow-up, but not before in Africa.

The TITI study in Benin, Burkina Faso, Cameroon, and the Central African Republic involved screening children younger than 5 years who had been in contact with active tuberculosis and giving preventive treatment

to those who were negative. Of the 1745 children who started 6 months of isoniazid or 3 months of rifampicin-isoniazid, 94% completed treatment and only one developed active tuberculosis.

Lead author Valérie Schwoebel said the activity was well accepted within

the programmatic context. "The next step is how to take advantage of the results to implement the contact investigation at national scale, with countries adapting the model to their own organization."

Campaigners welcome the focus on prevention but say it should be an equal part of a three-pronged approach including treatment and better diagnostics. Lucica Ditiu, a dynamic Romanian public health doctor who runs the Stop TB Partnership, a global UN partnership of 1800 organisations in 100 countries, says that one of the biggest problems the tuberculosis community has had in the past was to prioritise one over the other. "I would put them in one package. People need to think in a comprehensive way, and use a comprehensive package. That will be the only way that we will end TB."

Jacqui Thornton

Jacqui Thornton was a media scholar at the 50th Union World Conference on Lung Health, which provided her air fare and accommodation expenses to attend



Infectious disease surveillance update

Measles in DR Congo

222 939 cases of measles have been reported in DRC, from the beginning of the year to Oct 20, including 4435 deaths. Overall, 230 of the 519 health zones in the country have confirmed outbreaks. Most cases have been reported from Tshopo, Kasai, Haut-Lomami, Kwilu, and South Ubangi provinces. This is this year's largest outbreak. Children younger than 5 years are the most affected, especially those who lose their maternal immunity early.

Dengue in Spain

On Nov 7, one of the first ever cases of sexually transmitted dengue fever was reported in Madrid, Spain. The case was diagnosed at the Ramón y Cajal Hospital, in a man who had unprotected sex with another man who had recently visited Cuba and the Caribbean. The patient arrived with symptoms of high fever, cutaneous

erythema, and intense pain, following microbiological confirmation of dengue fever. The patient had no history of travel to an endemic area globally or having visited the coastal areas in Spain where the vector has settled. Genetic testing showed that the patient and the sexual partner harboured the same strain, which matches the strain currently circulating in Cuba.

Hepatitis A in NJ, USA

541 cases of hepatitis A have been reported in New Jersey, USA between the beginning of the outbreak in December 2018 and Nov 2, including six deaths. Of these cases, 512 met the national outbreak case definition used to standardise information from the affected states. 337 of 398 cases with data available were hospitalised. Most cases have been reported in the south of the state with the highest numbers being reported in Camden county (140) and Gloucester county (62).

New Jersey is one of 28 states currently dealing with hepatitis A outbreaks. According to the US Centers for Disease Control and Prevention, nationally since the outbreaks began in 2016, 27 634 people have been infected.

Klebsiella in Germany

An outbreak of multidrug-resistant *Klebsiella pneumoniae* sequence type 307 was reported in Mecklenburg-Western Pomerania, in Germany. The strain is carbapenemase producing (NDM-1 and OXA-48) and colistin resistant. As of Oct 21, 17 cases have been reported from three hospitals and a rehabilitation centre. Six of the 17 cases presented with symptoms; the remaining were carriers. *K pneumoniae* ST307 is a high-risk clone expanding globally, including in the EU/EEA in 2019 where it was introduced through Germany and Finland.

Ruth Zwizwai

For more on **measles in DR Congo** see <http://outbreaknewstoday.com/drcongo-measles-epidemic-continues-rise-nearly-223k-cases-to-date-38239/>

For more on **dengue in Spain** see <http://outbreaknewstoday.com/dengue-sexual-transmission-reported-in-madrid-45857/>

For more on **hepatitis A in the USA** see <https://www.nj.com/news/2019/11/nj-hepatitis-a-outbreak-number-of-cases-up-to-541-as-hundreds-line-up-for-vaccines.html>

For more on **klebsiella in Germany** see <https://www.promedmail.org/post/6758919>